

change includes the steps of:

a) establishing an edge image and a reference edge image based on a reference image and a current image detected in a view field of a stationary image capturing device;

b) calculating a correlation value for at least one region of the edge image and a corresponding partial image of the reference edge image;

c) identifying a change of the at least one region when the correlation value falls below a threshold value; and

d) outputting an alarm when the at least one region is identified as changed for a predetermined time interval longer than a corresponding time interval that the edge image is detected to be changed.

In the Drawing:

A sketch of Fig. 1 with changes on it marked in RED has been filed to make changes to comply with U.S. Patent Office Rules. Labels have been provided for empty boxes. Approval of the changes in Fig. 1 is respectfully requested.

In the Claims:

Please add the following claims 13 to 20 and cancel without prejudice claims 1 to 7:

13. A method of monitoring a predetermined scene to detect variations in the scene, said method comprising the steps of:

a) establishing an edge image and a reference edge image based on a reference image and a current image detected in a view field of a stationary image capturing device;

b) calculating a correlation value for at least one region of the edge image and a corresponding partial image of the reference edge image;

B₂ c) identifying a change of the at least one region when the correlation value falls below a threshold value; and

d) outputting an alarm signal when the at least one region is identified as changed for a predetermined time interval that is longer than a corresponding time interval that the edge image is detected to be changed.

14. The method as defined in claim 13, further comprising calculating an average quadratic deviation of said at least one region of the edge image and said corresponding partial image of the reference edge image when said correlation value exceeds said threshold value, so that possible brightness differences between said at least one region of the edge image and said corresponding partial image of the reference edge image are eliminated from the calculating;

whereby deviations of said at least one region of the edge image from said corresponding partial image of the reference edge image that do not result from image noise and said brightness differences are distinguished.

15. The method as defined in claim 14, further comprising computing current image noise and storing said current image noise for subsequent image comparisons when none of said deviations that do not result from said image noise and said brightness differences are distinguished.

Bv 16. The method as defined in claim 13, further comprising positioning said stationary image capturing device so that an object to be monitored is in said view field and said variations include motions of said object or changes in said object.

17. The method as defined in claim 16, wherein said object is an exhibited object in a museum.

18. The method as defined in claim 16, wherein said object is an automatic teller machine and said at least one region includes at least one of a keypad field, a cash distribution slot and a card slot of the automated teller machine.

19. A monitoring system for monitoring a predetermined scene to detect variations in the scene, said monitoring system comprising

- means for generating a current image in a view field;
- means for establishing an edge image and a reference edge image based on a reference image and the current image detected in the view field;

means for calculating a correlation value for at least one region of the edge image and a corresponding partial image of the reference edge image;

means for identifying a change of the at least one region when the correlation value falls below a threshold value; and

means for outputting an alarm signal when the at least one region is identified as changed for a predetermined time interval that is longer than a corresponding time interval that the edge image is detected to be changed;

wherein said means for generating said current image comprises a stationary image capturing device; said means for calculating said correlation value comprises a computer for processing image data and said computer includes means for testing whether or not said correlation value is above or below said threshold value in order to identify said change.

20. The monitoring system as defined in claim 19, further comprising means for calculating an average quadratic deviation of said at least one region of the edge image and said corresponding partial image of the reference edge image when said correlation value exceeds said threshold value, so that possible brightness differences between said at least one region of the edge image and said corresponding partial image of the reference edge image are eliminated from the calculating.